

Neuro-dermatological association between psoriasis and depression: an immune-mediated inflammatory process validating skin-brain axis theory

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Abstract

Psoriasis is a chronic inflammatory disease of the skin with multiple comorbidities, depression being one of them. Psoriasis affects the personal, social, and sexual lives of the patients resulting in psychological strain. Psoriasis and depression amplify each other. Supporting evidence has proven multiple common mechanisms between the two diseases: inflammatory overlap, genetic evidence, low vitamin D3, and melatonin levels are common in both psoriasis and depression. Fear of social rejection and self-stigmatization act as a fuel to fire inflaming depression in psoriatic patients. Psoriasis is a chronic, inflammatory, immune-mediated disease of the epidermis with systemic involvement. Psoriatic lesions appear as itchy, reddish raised plaques covered with silvery scales. Generally considered to be a skin disease, psoriasis is associated with multiple comorbid disorders, including mood disorders. Psoriatic lesions can appear anywhere on the body, and the ones appearing on the uncovered areas of the body bring forth the feelings of being unattractive and frustration; patients tend to isolate themselves socially and start being alone, which makes them depressed. Psoriasis affects the social, personal, and sexual lives of the patients, thus reducing the quality of life (QoL) and causing psychological strain. Lives at home, school, and workplace are affected. Myths that psoriasis is a contagious disease stigmatize and exclude the patients from schools, workplaces, and swimming pools, devastating their social lives. Studies have proven that the depressive symptoms were exacerbated in patients who felt stigmatized in social situations as compared to those who were not stigmatized by these situations.

Objective: Our study's motive was to recognize various immune-mediated inflammatory processes involved in the pathogenesis of depression and psoriasis and interlink between them based on inflammatory mediators.

Methods: A careful and comprehensive literature search was done through various databases like PubMed, Google Scholar, and EBSCO. A total of 56 studies were included in our study after careful screening.

Results: The immune-mediated inflammatory process was significantly associated with the pathogenesis of both depression and psoriasis. Most of the inflammatory markers involved in Psoriasis (TNF- α , IL-2, IL-6, IL-23, IL-1 β , IL-10), and increased serotonin transporters (5-HTT) were also found in the pathogenesis of depression, showing the immune-inflammatory linkage between psoriasis and major depression. Based on immune chemistry, the levels of CD2+, CD4+, CD8+ T lymphocytes were also found to be raised in both depression and psoriasis, validating their relationship. Hyperactivity of HPA-axis was also found another interlink between them along with reduced melatonin amount.

Conclusions: According to various studies, the neuro-dermatological association between psoriasis and depression is significant. Different immune markers involved in the pathogenesis of depression and psoriasis also show the bidirectional association between them. However, this association between psoriasis and depression is positively correlated, but more work is required to answer why all depressed patients fail to develop psoriasis and why all psoriatic patients fail to develop depression.

Keywords: depression; Psoriasis; epidermis; psychological strain; inflammatory mediators; pathogenesis; bidirectional;

Biography

Shahzaib Maqbool medical undergraduate of Rawalpindi Medical University, Rawalpindi, Pakistan is 25 years old passionate and hardworking young researcher. After being capable of doing great work in the field of research i have been dsignated as a head of research department in an organisation named VFHAT. Recently i have been given the membership in Medical student advisory board (MSAB) of international journal of clinical research (IJCR). I have 10 researches published in well reputed journals and some are under process of publishing as well.
